Monitoring Air Pollution Transport

EPA Office of Research and Development's Advanced Monitoring Initiative (AMI) and Global Earth Observation System of Systems (GEOSS): Improving our Ability to Understand the Impact of Poor Air Quality on Human Health and Well Being

Issue: Air quality management decisions and policies will be expanding from local and regional scales to include continental and international scales.

Response: By integrating local and regional observational capabilities, an understanding of air quality will begin to emerge on a local-to-global basis.

Outcome: Through an enhanced observational system integrated with modeling, indicators, and decision support tools, data will be transformed into new information to help the public avoid harmful exposures and to help air quality managers cope more effectively with air pollution episodes over the short and long terms.

Global Scale Research

Integration and Evaluation of Global Emissions Inventories in the Networked Environmental Information System for Global Emissions Inventories (NEISGEI) Framework

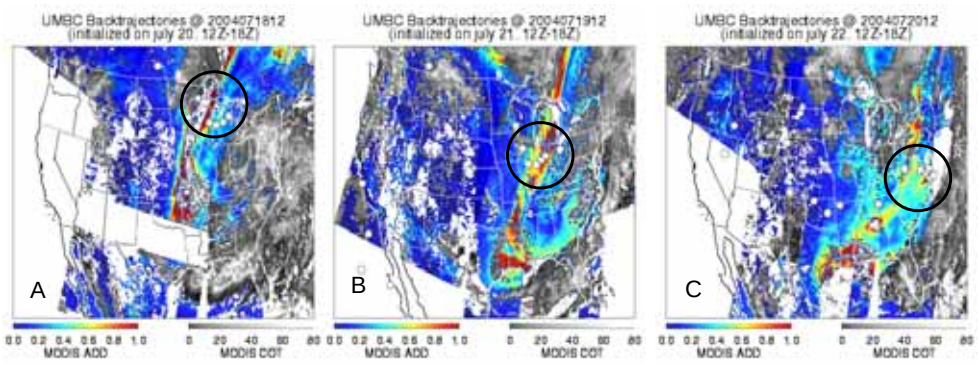
Terry Keating, EPA/Office of Air and Radiation
Stefan Falke and Rudolf Huser: Washington University, St. Louis
Gregory Stella, Alpine Geophysics

Ground Level Ozone Concentrations Based on Satellite Observations and Surface Monitoring in Support of US-Mexico Border 2012 Program Environmental Health Decisions

Vance Fong, Debbie Lowe, Jan Baxter, EPA/Region 9

Application of Integrated O_3 Observing System to Houston-Galveston-Gulf Shore Region and Eastern Great Lakes Region

James Szykman and John Lyon, EPA/Office of Research and Development



This figure shows 2-Day LaRC backtrajectories (small white circles) initialized below 1 km at UMBC with Moderate Resolution Imaging Spectroradiometer sensor data (MODIS). Black circles show movement of clusters from July 20 (panel A) to July 22 (panel C). The high MODIS AOD in the Midwest is associated with rapid long-range transport of emissions from Alaskan wild fires. Elevated MODIS AOD over eastern Virginia is associated with the slow moving regional sulfate event formed over the southeast.

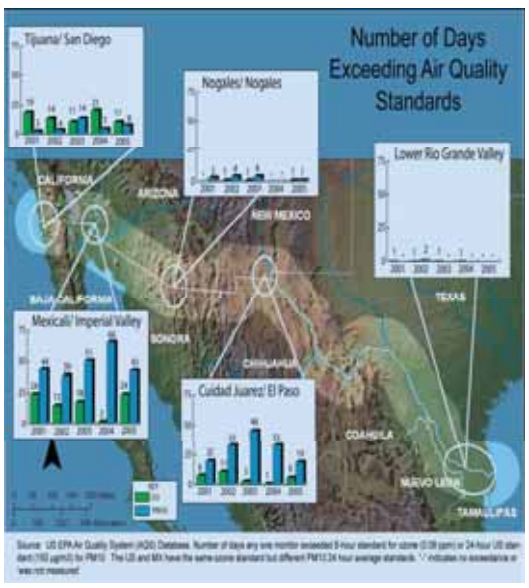
Monitoring Mercury Speciation and Reactions in Utility Emissions Plumes

Mathew Landis and Jeff Ryan, EPA/Office of Research and Development

Application of Advanced Monitoring to Characterize Near Roadway Air Quality and Exposures

Rich Baldauf and Eben Thoma, EPA/Office of Research and Development

Air quality standards are set to protect people from potential harmful exposure to air pollutants. Air quality can be assessed by examining the number of days that a standard is exceeded within a monitored area. This map presents air quality data for five regional monitoring areas with monitors located on both sides of the US and Mexican border.



Clean Air Interstate Rule (CAIR) Accountability Assessment: An Integrated Model-Measurement Approach to Assess Synoptic-Scale Transport of Sulfate Aerosols

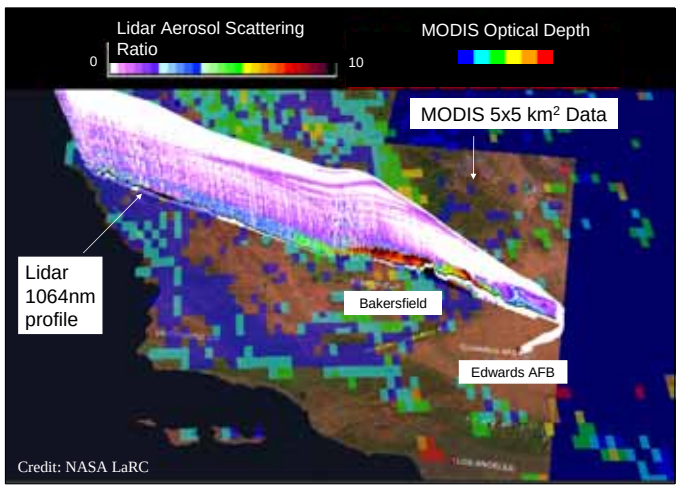
Fred Dimmick, EPA/Office of Research and Development
Alan Rush and Rich Scheffe, EPA/Office of Air and Radiation

Receptor Modeling Applications for State Implementation Plans (SIPS)

Shelly Eberly, EPA/Office of Research and Development

Application of Satellite Data for Three-Dimensional Monitoring of $PM_{2.5}$ Formation and Transport in San Joaquin Valley, California

Rebecca Rosen, EPA/Region 9 Air Division
James Szykman, EPA/Office of Research and Development



This figure uses aerosol lidar data to establish 3-D aerosol structure. It shows the topography of southern San Joaquin Valley, CA, overlaid with MODIS AOD and the aerosol scattering vertical profile for lidar flights through SJV on 6/12/03.

Local Scale Research

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